Remarks

REJECTIONS UNDER 35 U.S.C., § 112

Claims 31 and 35 stand rejected under 35 U.S.C., 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner states:

> "The applicant claims the composition is free of non-ionic surfactants. However, claim 9 from which it depends allows for the inclusion of various non-ionic surfactants including glycol ether surfactants which are well-known to be nonionic. Furthermore, as the methyl esters reduce surface tension and are nonionic, such compounds would also broadly qualify as nonionic surface reducing agents (i.e. surfactant)."

Applicants respectfully request that the Examiner reconsider the rejection. Applicants have perused reference works such as McCutcheon's reference for Emulsifiers and Detergents and Functional Materials. Applicants could find no reference to the materials cited by the Examiner as being nonionic surfactants. The fatty acid solvent esters and the materials such as propylene glycol butyl ether are not known in the art as surfactants. These materials may have a slight effect on the surface tension of water but the effect is not substantial enough to consider the materials as surfactants. The glycol ethers and the fatty acid esters do not have hydrophilic and hydrophobic groups which provide the surfactant properties to the known surfactants. Applicants submit that the compounds are nonionic materials but do not have a sufficient effect on surface tension of water to be considered a surfactant; certainly not a useful surfactant.

As is well known in the art, almost any material which has a solubility in water can affect the surface tension of water if present in sufficient quantities. Therefor using the Examiner's reasoning almost every substance should be considered a surfactant. Recently, it has become common in Europe to classify surfactants as materials which

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reduce the surface tension of water to less than 45 dynes/cm. Applicants herewith submit the definition of detergent from Hawleys' CONDENSED CHEMICAL DICTIONARY, 12th Edition, page 357. The definition indicates the LAS detergents must have at least 10 carbon atoms in the alkyl group to be considered a detergent (surfactant). Applicants submit that shorter chain length carbon moieties would probably have some effect on the surface tension of water but are not considered a detergent.

In the present application, the composition can contain substantial amounts of water. When substantial amounts of water are present in a composition, a co-surfactant, preferably a short-chain co-surfactant is included in the composition. Although noted as a co-surfactant, short-chain compositions such as C_3-C_8 alcohols, glycols, glycol ethers, pyrrolidones, and glycol ether ester are included in the composition. Although these materials are not known surfactants, in the microemulsion art, they are called co-surfactants and must be soluble in the oil phase and in the aqueous phase but do not substantially lower the surface tension of water.

In view of the above discussion, Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. 112.

REJECTIONS UNDER 35 U.S.C., § 102.

Claims 1-35 stand rejected under 35 U.S.C. 102(b) as anticipated by Van Eenam (U.S. 6,423,677). Applicants respectfully submit that Van Eenam neither teaches nor suggests the present invention.

To be a reference on which a rejection under 35 U.S.C. 102(b) can be based, the reference must disclose each and every limitation in the claims. Van Eenam fails as a reference for a rejection under 35 U.S.C. 102(b) since it neither teaches nor suggests the limitations in the claims.

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Van Eenam neither teaches nor suggests the major limitation in claim 1. Van Eenam is completely silent concerning a composition containing a cyclic ketone and a C_{1-4} alkyl ester of a C_{6-22} saturated or unsaturated carboxylic acid in a ratio of from about 10:1 to about 1:10. Since claims 2-8 are dependent on claim 1, Van Eenam does not provide a proper disclosure on which a rejection under 35 U.S.C. 102(b) can be based. Applicants respectfully request that the rejection of claims 1-8 be reconsidered and withdrawn.

A rejection under 35 U.S.C. 102(b) of claims 9-35 is untenable since Van Eenam fails to disclose any limitations in the claims. Claim 9 is directed to a terpene-free cleaning composition comprising

(a) from about 2 to about 12% by weight of an oil-soluble anionic surfactant;

(b) from about 0.2 to about 6% by weight of a water-soluble anionic surfactant;

(c) from about 3 to about 96% by weight of a primary solvent consisting of a C_{1-4} alkyl ester of a C_{6-22} saturated or unsaturated carboxylic acid;

(d) from about 2 to 14% by weight of a short-chain cosurfactant, and

(e) remainder, water, all weights being based on the total weight of the composition.

Firstly, Van Eenam is completely silent concerning a composition containing an oil-soluble anionic surfactant and a water-soluble anionic surfactant within the ranges claimed in claim 9. None of the examples disclose a composition containing an oil-soluble surfactant and a water-soluble surfactant within the ranges as claimed in claim 9.

Van Eenam discloses a long list of possible useful anionic surfactants. However, it is not certain of the character of all of the surfactants disclosed and certainly there is no teaching nor suggestion to include the oil-soluble and the water-soluble surfactants within the ranges claimed in the composition. None of the examples contain the surfactant system useful in the practice of the present invention containing the oil-soluble and the water-soluble anionic surfactants. In addition, Van Eenam teaches that

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the composition can contain nonionic surfactants. Clearly, the claims which are directed to nonionic surfactant-free compositions would neither be taught nor suggested by Van Eenam.

In addition, Van Eenam teaches that the composition of the invention is substantially water-free. That is, the composition is limited to not more than 10% by weight of water. Applicants respectfully submit that the composition of the present invention as shown in the examples can contain in the range of about 30% by weight water. In addition, there is neither teaching nor suggestion of a composition containing the ester solvent and about 6 to about 8% of the oil-soluble anionic surfactant. None of the examples in Van Eenam teach or suggest a composition falling with the range of the composition of the present invention.

Claim 17 not taught or suggested by Van Eenam since there is neither teaching nor suggestion of a composition of claim 9 containing from about 40 to 50% by weight of the primary solvent.

Van Eenam is completely silent concerning the thermal stability of the composition as set forth in claim 22. Applicants therefor respectfully submit that a rejection of claim 22 under 35 U.S.C. 102(b) is untenable and should be withdrawn.

Claim 24 is patentable over Van Eenam since there is neither teaching nor suggestion of a composition containing a primary solvent and water in a ratio by weight of from about 1.5:1.

Claim 25 is clearly patentable over Van Eenam since there is neither teaching nor suggestion of claim 9 further comprising a cyclic ketone.

Claim 26 is patentable over the teachings of Van Eenam since there is neither teaching nor suggestion of a composition containing the cyclic ketone cyclohexanone.

Claim 27 is patentable over Van Eenam since there is neither teaching nor suggestion of the composition of claim 9 wherein the cyclic ketone is present in an amount of from about 1 to 35% by weight based on the weight of the composition.

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Claim 28 is clearly patentable over Van Eenam since there is neither teaching nor suggestion of a composition containing a cyclic ketone in an amount of 10 to about 20% by weight based on the weight of the composition.

Claim 29 is clearly patentable over Van Eenam since there is neither teaching nor suggestion of a composition wherein the ratio of the primary solvent to the cyclic ketone is a ratio by weight of 10:1 to about 1:10.

Claim 30 is clearly patentable over the teachings of Van Eenam since there is neither teaching nor suggestion of the composition of claim 25 wherein the primary solvent and the cyclic ketone are present in the composition in a ratio by weight of about 2:1.

Claim 31 is clearly patentable over the teachings of Van Eenam since there is neither teaching or suggestion of a composition which is free of nonionic surfactant.

Claim 32 is not anticipated by Van Eenam since there is neither teaching nor suggestion of the composition containing the primary solvent and water in the ratio of about 1.5%.

Claims 33 and 34 are not anticipated by Van Eenam since Van Eenam is completely silent concerning the presence of cyclic ketones and, in particular, cyclohexanone in the composition.

Claim 35 is patentable over Van Eenam since there is neither teaching nor suggestion of a composition which is free of nonionic surfactants.

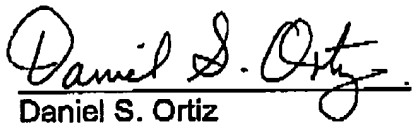
Claims 1-35 stand rejected under 35 U.S.C. 102(b) as anticipated by Van Eenam (U.S. 5, 585, 341). Applicants respectfully submit that Van Eenam, '341 neither teaches nor suggests the present invention. Since U.S. 6,423,677 is based on a continuation and divisions of U.S.S.N. 394,797 filed February 27, 1995, the specifications of Van Eenam '341 and '677 are the same. Applicants therefore respectfully submit that a rejection based on U.S. 5,585,341 is untenable in view of the discussion directed to the disclosure of U.S. 6,423,677.

In addition, the composition disclosed in Van Eenam contains only small amounts of water, but when it is mixed with large quantities of water, the composition forms a solution of the active ingredients in water.

In contrast to the teachings of Van Eenam, Applicants submit that the composition of the present invention is neat (that is, does not contain water) or forms a microemulsion of the water-in-oil type rather than a solution. Clearly, Van Eenam neither teaches nor suggests a composition which forms a microemulsion of a water-in-oil type.

In view of the above discussion, Applicants respectfully submit that Van Eenam neither teaches nor suggest the present invention and therefore a rejection under 35 U.S.C. 102(b) is untenable. Applicants respectfully request that the rejection be reconsidered and withdrawn.

Respectfully submitted,



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Enc.: Page 357, HAWLEYS' CONDENSED CHEMICAL DICTIONARY

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Hawley's

Condensed Chemical

Dictionary

TWELFTH EDITION

Revised by

Richard J. Lewis, Sr.

VAN NOSTRAND REINHOLD COMPANY
New York

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desiodothyroxine. See thyronine.

"Desmodur" [*Union Carbide*]. TM for a group of isocyanates and isocyanate prepolymers for urethane coatings, foams, adhesives, etc.

"Desmophen" [*Union Carbide*]. TM for a group of polyesters and polyethers for cross-linking with isocyanates.

"Desmophen A" [*Union Carbide*]. (urethane acrylics). TM for polyacrylate resins.
Use: In chemical- and weather-resistant polyurethane coatings.

desorption. The process of removing an adsorbed material from the solid on which it is adsorbed. See adsorption. Desorption may be accomplished by heating, by reduction of pressure, by the presence of another more strongly adsorbed substance, or by a combination of these means.

desoxy-. See deoxy-

desoxycholic acid. FCC name for deoxycholic acid.

Despretz law. States that the temperature of maximum density of water is lowered from 4C on the addition of a solute by an amount proportional to the concentration of the solution.

destructive distillation. An operation in which a highly carbonaceous material, such as coal, oil shale, or tar sands, is subjected to high temperature in the absence of air or oxygen, resulting in decomposition to solids, liquids, and gases. As the solid end product is carbon, the term carbonization is often used. Other terms with the same general meaning as destructive distillation are pyrolysis and thermal decomposition. Destructive distillation of coal is carried out in the temperature range of 350–1000C, yielding coal tar, coal gas, and char (coke, carbon).

detergent. Any substance that reduces the surface tension of water, specifically a surface-active agent which concentrates at oil-water interfaces, exerts emulsifying action, and thus aids in removing soils. The older and still widely used types are the common sodium soaps of fatty acids, which are relatively weak. The much stronger synthetic detergents are classed as anionic, cationic, or nonionic, depending on their mode of chemical action. The latter functions by a hydrogen-bonding mechanism. The most widely used group comprises linear alkyl sulfonates (LAS), often aided by "builders." LAS are preferable to alkyl benzene sulfonates (ABS) because they are readily decomposed by microorganisms (biodegradable). LAS are straight chain compounds having 10 or more carbon atoms in the chain. The branched chains characteristic of ABS resist decomposition; these have been largely replaced by LAS because of water pollution.
See surface tension, emulsion, wetting agent, soap (1), alkylate (3), biodegradability, eutrophication, builder detergent.

determinate error. An error that can be identified and thus corrected or reduced.

detonation. The extremely rapid, self-propagating decomposition of an explosive accompanied by a high-pressure-temperature wave that moves at 1000–9000 meters/second. May be initiated by mechanical impact, friction, or heat. Detonation is a characteristic of high explosives, which vary considerably in their sensitivity to shock, nitroglycerin being one of the most dangerous in this respect.
See also explosive, high; deflagration.

deuterium. (heavy hydrogen). Symbol D. An isotope of hydrogen whose nucleus contains one neutron and one proton and is therefore twice as heavy (aw 2.014) as the nucleus of normal hydrogen. The ratio in nature is 1 part deuterium to 6500 parts normal hydrogen.
See deuteron.
Properties: Almost identical with hydrogen, d (H=1) 2.0, fp −254.4C (121 mm Hg), bp −249.5C, autoign temperature 1085F, noncorrosive.
Derivation: Electrolysis of high-purity heavy water, fractional distillation of liquid hydrogen.
Grade: 98, 99.5 atom %.
Hazard: Highly flammable and explosive. Explosive range 4–74%.
Use: Bombardment of atomic nuclei, tracer element, thermonuclear reactions.
See also deutero-, heavy water.

deuterium oxide. See heavy water.

deutero-. (deuterated). Prefix indicating that one or more of the hydrogens in a compound is the deuterium isotope. Example: deuteroborane solution, used for labeling olefinic unsaturation. The adjective form, deuterated, has the same meaning. Deuterated ethylene, sometimes written ethylene-1,1-D_2, has the formula $CH_2{:}CD_2$.

deuteron. (deuton). A nuclear particle having mass two and a positive charge of 1, identical with the nucleus of the deuterium atom.

Devarda's metal. (Devarda's alloy).
Properties: Gray powder. Contains copper, alu-

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